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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,327	11/07/2001	Okimitsu Yasuda	OPS Case 555	3328
7590 11/19/2003				
FLYNN, THIEL, BOUTELL & TANIS, P.C.		EXAMINER		
2026 Rambling Road		PERRIN, JOSEPH L		
Kalamazoo, MI 49008-1699				
		ART UNIT	PAPER NUMBER	3
		1746		

DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/045,327

Applicant(s)

YASUDA ET AL.

Examiner

Joseph L. Perrin, Ph.D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 3-7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Japan on 21 November 2000. It is noted, however, that applicant has not filed a certified copy of the 2000-354784 application as required by 35 U.S.C. 119(b).
2. Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon an application filed in Japan on 14 June 2000. A claim for priority under 35 U.S.C. 119(a)-(d) cannot be based on said application, since the United States application was filed more than twelve months thereafter.

Information Disclosure Statement

3. It is noted that an Information Disclosure Statement under 37 CFR 1.97 for the present application has not been received by the Office. If Applicant believes this to be in error, Applicant is urged to submit documentation supporting a proper filing of any previously submitted information disclosure statements in order to have such disclosures considered by the Office.

Claim Objections

4. Claims 6-7 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Re claim 6, the claims are directed to a future intended use, e.g. operation of the apparatus such as what is being supplied to the apparatus, and thus, fails to provide further structural limitation to the claimed apparatus. Re claim 7, the claims are directed to operation of the apparatus such as the operational temperature range of the reaction bath, and thus, fail to provide further structural limitation to the claimed apparatus. Accordingly, these claims have not been further treated on the merits.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by JP 03-147323 (hereinafter "JP '323").

- JP '323 discloses a sulfuric acid recycling system with a concentrating/purifying bath 3 (reaction bath) including pipe lines 8 (introduction port and discharge port), a processing bath 1, and a supply unit 4 connected to the processing bath (see, for instance, Figure 1 and the abstract of JP '323). Accordingly, recitation of JP '323 reads on applicant's claimed invention.

Claim Rejections - 35 USC § 103

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP '323 in view of US 5,963,878 to Brereton *et al.* (hereinafter "Brereton").

Recitation of JP '323 is repeated here from above. Although JP '323 does disclose the sulfuric acid purification apparatus being used for distilling and

purifying sulfuric acid, which inherently must include heaters to distill the sulfuric acid, JP '323 does not expressly disclose a gas discharge port with suction unit to remove water and purify/concentrate the sulfuric acid.

Brereton teaches that it is known to provide a processing apparatus having a recirculating system with a sulfuric acid recycling/concentrating apparatus utilizing a conduit 120 (gas discharge port) connected to a vacuum system 123 (suction unit) for the purpose of removing water to re-concentrate and recycle sulfuric acid in a processing system. Therefore, the position is taken that a person of ordinary skill in the art at the time the invention was made would have been motivated to modify the sulfuric acid concentrating apparatus of JP '323 with the vacuum system of Brereton in order to enhance removal of water and consequently, recycling and re-concentration of sulfuric acid.

Allowable Subject Matter

11. Claims 3-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
12. The following is a statement of reasons for the indication of allowable subject matter:

The closest prior art of record fails to teach each and every limitation of the instant invention. Specifically, the prior art of record fails to teach or suggest a sulfuric acid recycling apparatus further utilizing a plurality of partition plates and inclination plate for controlling flow of the sulfuric acid, as claimed, or the

claimed sulfuric acid recycling apparatus further utilizing a water drop storage bath, as claimed, which are disclosed as essential elements of claimed invention, as described in claims 3 and 5.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US 6,055,995 to Miyazawa, which discloses a wafer processing apparatus with sulfuric acid concentrating apparatus for removing moisture.

US 4,917,123 to McConnell *et al.*, which discloses a wafer processing apparatus with sulfuric acid concentrating baths.

US 4,778,532 to McConnell *et al.*, which discloses a wafer processing apparatus with sulfuric acid concentrating baths.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph L. Perrin, Ph.D. whose telephone number is (703)305-0626. The examiner can normally be reached on M-F 7:30-5:00, except alternate Fridays.

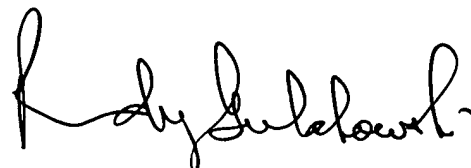
15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (703)308-4333. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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16. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

Joseph L. Perrin, Ph.D.
Examiner
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jlj

A handwritten signature in black ink, appearing to read "Randy Gulakowski". The signature is fluid and cursive, with a large initial "R" and a long, sweeping underline.

RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700